

# PATENT ABSTRACTS OF JAPAN

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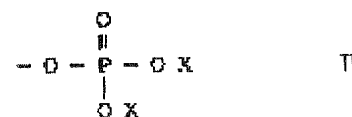
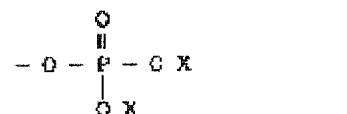
## (54) PRODUCTION OF PAPER OF PAPERBOARD

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To obtain a paper or a paperboard, good in fixing property to a pulp and excellent in paper force strength by making the paper after adding a (meth)acrylamide-based water dispersible high molecular weight material containing a specific phosphoric acid group to the pulp slurry containing a prescribed amount of calcium ion.

**SOLUTION:** This method for producing a paper or a paperboard comprises making the paper after adding preferably 0.1-1wt.% (based on the solid portion of a pulp) (meth)acrylamide-based water dispersible high molecular weight material containing a phosphoric acid group of formula I (X is H, a 1-4C hydrocarbon or an alkali metal) as a paper force strength reinforcing agent

to the pulp slurry containing 50-5000ppm calcium ion. Further, the (meth)acrylamide-based water dispersible high molecular weight material containing the phosphoric acid group is preferably a water dispersible high molecular weight material consisting of (meth)acrylamide and a monomer containing phosphoric acid group of formula II (X is H, a 1-6C hydrocarbon or an alkali metal) as main constituting components. Also, pH of the paper making system can be applicable from an acid region to an alkaline region.



	組 成 (モル%)				
	AM	アニオン性 モノマー	カチオン性 モノマー	リン酸基含 有モノマー	その他のモノ マー等
製造例 1	96.0	_____	_____	PM 4	_____
製造例 2	92.0	AA 2	DMA PAA 4	PM 2	_____
製造例 3	92.0	_____	DMA PAA 4	PM 4	_____
製造例 4	91.5	_____	DMA PAA 4	PM 4	DMAA 0.5
製造例 5	92.0	_____	DM 4	PM 4	_____
製造例 6	96.0	AA 4	_____	_____	_____
製造例 7	92.0	AA 4	DMA PAA 4	_____	_____
製造例 8	92.0	AA 4	DM 4	_____	_____

[0032] The inside of Table 1, AM:acrylamide and PM:monochrome (2-methacryloiloxy-ethyl) acid phosphate, AA:acrylic acid, DMA PAA:dimethylaminopropyl acrylamide, DM:dimethylaminoethyl methacrylate, DMAA: Dimethyl acrylamide is shown.

[0033]

[Table 2]

	性 状	
	固形分 (%)	粘度 (c p s)
製造例 1	10.4	7300
製造例 2	10.3	8500
製造例 3	10.5	8800
製造例 4	10.8	5500
製造例 5	10.8	7900
製造例 6	10.4	6500
製造例 7	10.4	7300
製造例 8	10.5	6100

[0034] the example BKP of reference -- a Niagara style -- after adding a sodium carbonate as a pH regulator to the pulp which carried out beating with the beater and which was adjusted to Canadian standard freeness (C. S.F) 550ml -- further -- a sulfuric-acid band -- 0.5% for pulp -- the water dispersion of each acrylamide system macromolecule obtained in each example of manufacture which is added and is shown subsequently to Table 3 -- a paper reinforcing agent -- carrying out -- 0.5% for pulp -- it added, and it agitated and mixed to homogeneity. The obtained pulp slurry (pH6.5) is diluted to 0.5%, and it is basis-weight 100 g/m<sup>2</sup> with the TAPPI sheet machine. Paper making is carried out so that it may become, and it is 5 kg/m<sup>2</sup>. Press dehydration was carried out for 2 minutes. Subsequently, in 100